

WHAT IS CLAIMED:

1. A system, comprising:

a decoder to decode encoded video information having a first format into intermediate video information and to extract motion vectors from the encoded video information;

an encoder to encode the intermediate video information into output video information having a second format using the motion vectors extracted from the encoded video information;

and

a device to store the output video information from the encoder.
2. The system of claim 1, wherein the first format and the second format have a common format.
3. The system of claim 2, wherein the common format includes MPEG-1, MPEG-2, MPEG-4, H.264, Windows Media Video version 9 (WMV9) or Advanced Video System (AVS).
4. The system of claim 1, wherein the first format includes MPEG-2, and wherein the second format includes H.264.
5. The system of claim 1, wherein the decoder is arranged to extract quantization data, picture data, or error data from the encoded video information.

6. The system of claim 1, wherein the encoder includes a digital to analog converter, and
wherein the intermediate video information includes analog pixel information.

7. The system of claim 1, wherein the intermediate video information includes digital pixel information.

8. The system of claim 1, further including:
an output port to output the intermediate video information.

9. A method, comprising:
extracting motion information from an encoded video stream;
converting the encoded video stream to an intermediate video stream; and
encoding the intermediate video stream into an output video stream using the motion information extracted from the encoded video stream.

10. The method of claim 9, wherein the extracting includes:
obtaining quantization data or picture data from the encoded video stream, and
wherein the encoding includes encoding the intermediate video stream using the motion information and the quantization data or the picture data obtained from the encoded video stream.

11. The method of claim 9, wherein the converting includes:
decoding the encoded video stream to generate a stream of uncompressed pixel data.

12. The method of claim 11, wherein the converting further includes:
converting the stream of uncompressed pixel data to analog form to generate the intermediate video stream.
13. The method of claim 9, wherein the encoded video stream and the output video stream share a common encoding format.
14. The method of claim 9, wherein the encoded video stream and the output video stream have different encoding formats.
15. The method of claim 9, further comprising:
storing the output video stream.
16. The method of claim 9, further comprising:
storing the intermediate video stream.
17. An apparatus, comprising:
a converter to convert input media information into intermediate media information having an intermediate format and to extract other information from the input media information;
and
an encoder to encode the intermediate media information into output media information having an output format using the other information extracted from the input media information.

18. The apparatus of claim 17, wherein the input media information is encoded in the output format.

19. The apparatus of claim 17, wherein the input media information is encoded an input format that is different from the output format.

20. The apparatus of claim 17, wherein the intermediate media information includes analog data.

21. The apparatus of claim 17, wherein the input media information is encoded, and
wherein the converter includes a decoder to decode the encoded input media information to generate the intermediate media information.

22. The apparatus of claim 17, wherein the other information includes motion vectors.

23. The apparatus of claim 17, further comprising:
a storage device to store the output media information from the encoder.

24. A method, comprising:
obtaining at least motion vectors from an encoded video stream;
decoding the encoded video stream to generate an analog video stream; and
encoding the analog video stream to generate an output video stream using the motion
vectors obtained from the encoded video stream.

25. The method of claim 24, wherein the obtaining further includes obtaining
quantization data and picture data from the encoded video stream.

26. The method of claim 25, further comprising:
controlling a rate of the encoding using the quantization data and the picture data.

27. The method of claim 24, further comprising:
storing the output video stream.